

REMARKS

Claims 4-9 are pending in this application; claims 1-3 having been cancelled as directed to a non-elected invention (such cancellation is without prejudice to or disclaimer of the subject matter recited therein, and Applicants reserve the right to later pursue the cancelled claims in a related continuing application), and claim 4 has been revised to distinguish over the cited art. Claims 4-9 have been rejected. Claim 4 is independent.

The revision to claim 4 is fully-supported by the original disclosure.

The Rejection Under
35 U.S.C. § 103

Claims 4-9 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,170,939 to Ujita et al. and U.S. Patent No. 6,634,738 to Shinada et al. Applicants respectfully traverse this rejection and submit the following arguments in support thereof.

As described in claim 4, Applicants' invention involves a liquid cartridge that includes a liquid accommodating chamber for containing liquid, a hollow part having a liquid supplying opening, into which a liquid supplying needle of a liquid ejecting apparatus is inserted, while the liquid supplying opening communicates with the liquid accommodating chamber, a seal member contained in the hollow part, this seal member having an insertion opening being in elastic contact with an external circumference of the liquid supplying needle, while the liquid supplying needle is inserted to the insertion opening, a supply valve contained in the hollow part, this supply valve being arranged in order to close or open the seal member's insertion opening, and an urging member for urging the supply valve toward the seal member. The supply valve has a body part of circular cross-section, and diameter that is substantially uniform, of which the

diameter is substantially the same as a diameter of the hollow part of the liquid supplying part, and having a cylindrical shape, of which the length in the sliding direction is greater than the diameter of the hollow part of the liquid supplying part. A taper part is formed at a first end of the body part, this taper part having an end engaged with the urging member, and a bottom face is formed at a second end of the body part, the bottom face having a flat surface being in contact with the seal member.

The Office Action contends various aspects of the present invention are suggested by Figs. 3A-6 of Ujita. However, it should be noted that Figs. 3A-4C of Ujita are labeled "PRIOR ART". Applicants therefore submit one skilled in the art would not consider those drawings together with Figs. 5 and 6 of Ujita; they would disregard Figs. 3A-4C and only look to the teachings of Figs. 5 and 6.

The Office Action, discussing Ujita, erroneously states that Ujita shows the liquid supplying needle 315 of liquid ejecting apparatus is inserted into liquid supplying opening 321. The Office Action is wrong, however, because the structure described is not part of the printer, but rather, is a recording head. The Office Action appears not to recognize that the structure shown in Figs. 5 and 6 of Ujita is an ink jet recording unit including both an ink jet recording head 301 and an ink tank cartridge 303, the ink tank cartridge being removably attached to the recording head (col. 19; lines 55-63; col. 19, line 66, through col. 20, line 4). One skilled in the art would understand that the recording head is entirely different from a liquid ejecting apparatus (printer). So Ujita does not suggest at least the aspects of the claimed invention providing for an ink cartridge receiving the ink supply needle of a printer.

The Office Action also appears to misconstrue the claimed body part - the Office Action asserts at page 3, lines 1-2, that Ujita teaches the claim feature involving the height of the

body part (306) being shorter than the diameter of the hollow part (322). However, independent claim 4 provides for a body part having a circular cross-section, of which a length in a sliding direction is **greater** (not shorter, as the Office Action contends) than the diameter of the hollow part of the liquid supplying part. Applicants therefore respectfully submit that this rejection in is based upon a substantial misunderstanding of the nature of the claimed invention.

This aspect of the present invention is relevant because the body part of the claimed supply valve has a particular shape. Specifically, the length in the sliding direction is greater than the diameter of the hollow part. Consequently, the supply valve is stabilized and is not tilted in the hollow part.

In contrast, in Ujita, because the height of the body part (306) is shorter than the diameter of the hollow part (322), the supply valve (311) can easily be tilted in the hollow part.

Because the Office Action later **admits** Ujita does not teach the height of the valve body is greater than the diameter of the hollow part of the liquid supplying part (this is clearly inconsistent with the aforementioned mischaracterization of the valve body earlier in Ujita), and states "the height of the body part (306) is shorter than the diameter of the hollow part (322)", (page 3, lines 1-2), it will be appreciated the Office Action therefore acknowledges Ujita teaches precisely the opposite of the claimed invention. So, alternatively, the Office Action **admits** that Ujita fails to even suggest the claimed supply valve structure.

The claims avoid the cited art for other reasons as well.

Although Ujita teaches a movable valve body 306, the Office Action **admits** that Ujita does not suggest the use of a seal member in the hollow part of the cartridge.

The Office Action looks to Shinada to remedy Ujita's deficiencies. In particular, the Office Action contends Shinada teaches the seal member lacking in Ujita.¹

Even assuming *arguendo* that this is correct and a seal structure is taught, Shinada still fails to suggest the claimed body part (which is a portion of the supply valve structure) just shown to avoid Ujita. As noted above, the claimed body part is of circular cross-section, cylindrical, and has a substantially uniform diameter that is substantially the same as the diameter of the hollow part of the liquid supplying part. The length of the body part in the sliding direction is greater than the diameter of the hollow part of the liquid supplying part.

While Shinada does teach a movable valve body 65, as shown in Figs. 4-6, that valve body is **not** cylindrical. Nor is that valve body shaped in the manner of the claimed body part, which has a substantially uniform diameter that is substantially the same as the diameter of the hollow part of the liquid supplying part. As shown in Fig. 5, for example, Shinada's valve body 65 is "dumbbell" shaped, not uniform, and is **narrower** than the diameter of the hollow part of the region of the ink cartridge in which the valve body is disposed. Shinada therefore also suffers from deficiencies relating to the shape of the body part, and does not remedy Ujita's own deficiencies in that regard.

The remaining rejected claims all ultimately depend from and so incorporate by reference all the features of independent claim 4, which features have been shown to patentably

¹ It should be noted that Shinada is commonly assigned along with the present application. To the extent this response discusses Shinada, such discussion involves the general teachings of that reference, and should not necessarily be construed to limit the scope of the claims of Shinada or its counterparts. If Shinada is characterized as teaching a particular feature or mode of operation, the claims of that reference and its counterparts should not necessarily be construed to require that feature or mode of operation unless the feature or mode of operation is specifically recited in the claims. In this regard, it should be noted that the claims of a patent are not necessarily limited to embodiments disclosed, and that limitations in the specification are not necessarily to be imported into the claims. Also, an inventor need not foresee all uses for their invention.

distinguish over the cited art. These dependent claims therefore are patentable over the cited art at least for the same reasons as claim 4.

For all the foregoing reasons, favorable reconsideration and withdrawal of this rejection are respectfully requested.

CONCLUSION

Applicants respectfully submit that all outstanding rejections have been addressed and are now overcome. Applicants further submit that all claims pending in this application are patentable over the prior art. Favorable reconsideration and withdrawal of those rejections and objections is respectfully requested.

Other than the fee for the accompanying Request for Continued Examination authorized therein, no fees are believed to be due. The Commissioner is nevertheless authorized to charge any fees deemed to be now or hereafter due in this application to Deposit Account No. 19-4709.

In the event that there are any questions, or should additional information be required, please contact Applicants' attorney at the number listed below.

Respectfully submitted,

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